

Textile mesh structure, in particular a geomesh

Inv. B1 → [0001] The invention relates to a textile mesh structure, in particular a geomesh, comprising linearly extending warp threads and weft threads which extend linearly substantially at a right angle to the warp threads and which are joined to the warp threads by means of fixing threads which are applied by warp knitting and the meshes of which extend around the warp threads over the entire length and the weft threads in the region of the intersections, wherein the warp threads and the weft threads are arranged individually or in groups at relatively large spacings which produce the internal widths of the mesh.

[0002] Textile mesh structures of that kind are known from US patents Nos 4 472 086 and 4 540 311. The linearly extending and load-carrying warp threads and weft threads of the mesh preferably comprise high-module polyester yarns or other high-strength filament yarns, for example of polyamide. The fixing thread which is knitted onto the structure and which joins the warp threads to the weft threads in the form of knitted meshes or tricot meshes is considerably weaker in terms of its thread strength than the warp threads and the weft threads.

[0003] If necessary that mesh structure after manufacture thereof is encased with a soft plastic material, for example PVC, with a bitumen emulsion or with latex.

Inv. B2 → [0004] ~~The object of the invention is to provide a better join between the warp threads and the weft threads without requiring additional fixing threads or stronger fixing threads.~~

[0005] ~~In accordance with the invention that object is attained in that in the regions in which the weft threads cross the warp threads the lengths of the meshes of the fixing threads are markedly shorter than in the regions which are therebetween.~~

[0006] Advantageously, the length of the meshes of the fixing threads in the regions in which the weft threads cross the warp threads is at least 30% shorter than the length of the meshes between the intersection regions. That measure provides for a considerable saving in terms of fixing threads or fixing yarn without any fear of an adverse influence on the strength of the mesh structure. The manufacturing speed of those textile mesh structures is also increased.

Inv. B3 → [0007] Further features of the invention are set forth in the claims.

[0008] An embodiment of the invention is described in greater detail in the description hereinafter with reference to the drawings in which:

[0009] Figure 1 is a diagrammatic view of the textile mesh structure, in accordance with the invention,

[0010] Figure 2 is a view on an enlarged scale of a register round or repeat of the mesh structure from one side, and

[0011] Figure 3 is a view on an enlarged scale of a register round or repeat of the mesh structure from the other side.

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 [0012] The textile mesh structure shown in Figure 1 is composed of linearly extending warp threads 1 and weft threads 2 which extend at a right angle to the warp threads 1. Each three warp threads 1 are combined to form a respective warp thread group 9. In addition each two weft threads 2 are combined to form a respective weft thread group 11. The weft threads 2 are joined to the warp threads 1 by means of fixing threads 3 which are knitted thereon. The meshes of the fixing threads 3 extend in a zig-zag configuration over the warp threads 1. The warp thread groups 9 and the weft thread groups 11 are arranged at relatively large spacings which afford the internal widths 5 of the mesh 6.

[0013] In accordance with the invention, in the regions 4 in which the weft threads 2 cross the warp threads 1, the lengths 8' of the meshes 7' of the fixing threads 3 are markedly shorter than in the regions therebetween of the mesh structure.

[0014] As Figures 2 and 3 in particular show the lengths 8' of the meshes 7' or the threads loops of the fixing threads 3 in the regions 4 in which the weft threads 2 intersect the warp threads 1 are at least 30% and preferably 50% shorter than the lengths 8 of the meshes 7 between the intersection regions 4. In the intersection regions 4, a mesh 7' of the fixing threads 3 can be associated with each weft thread 2 per warp thread 1.

[0015] So that the warp threads 1 are secured to prevent lateral displacement thereof, a joining yarn 10 is applied by a Raschel knitting procedure, for holding the warp threads 1 of a warp thread group 9 together or securing them to prevent lateral displacement. That joining yarn 10 can either extend around the warp threads 1 of a warp thread group 9 in a zig-zag configuration or, as

shown in Figures 2 and 3, the fixing threads 3 of each warp thread group 9. It is however also possible for the warp threads 1 of a warp thread group 9 to be secured to prevent lateral displacement by the fixing threads 3 of a warp thread group 9 changing by tricot thread laying from one warp thread 1 of a warp thread group 9 to the adjacent warp thread 1 of the same warp thread group 9.

[0016] The textile mesh structure according to the invention can also be combined in known manner with a non-woven material layer.

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List of references

- 1 warp threads
- 2 weft threads
- 3 fixing threads
- 4 intersection region
- 5 internal width
- 6 mesh structure
- 7 mesh
- 7' mesh in the region of the intersection 4
- 8 length of the mesh 7
- 8' length of the mesh 7'
- 9 warp thread group
- 10 joining yarn
- 11 weft thread group

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